



Hill Air Force Base, Utah

Final

**Environmental Assessment:
Proposed Aircraft Power Systems Repair
Transformation Facility,
Hill Air Force Base, Utah**

May 16, 2007

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Final
**Environmental Assessment (EA):
Proposed Aircraft Power Systems Repair
Transformation Facility,
Hill Air Force Base, Utah**

Contract FA 8222-05-D-0001, Delivery Order #0012

**Department of the Air Force
Air Force Materiel Command
Hill Air Force Base, Utah 84056**

May 16, 2007

Prepared in accordance with the Department of the Air Force Environmental Impact Analysis Process (EIAP) 32 CFR Part 989, Effective July 6, 1999, which implements the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) regulations.

FINDING OF NO SIGNIFICANT IMPACT

1. NAME OF ACTION: Construct an Aircraft Power Systems Repair Transformation Facility at Hill Air Force Base (AFB), Utah.

2. DESCRIPTION OF THE PROPOSED ACTION: Hill AFB proposes to accommodate current United States Air Force (USAF) missions by constructing a new aircraft power systems repair transformation facility (power systems facility) in which to perform a greater number and variety of component level repairs of aircraft auxiliary drive engine and gearbox components.

The proposed power systems facility and associated parking lot would be located in the vicinity of Building 245, comprising approximately 3.4 acres. A portion of the existing parking lot to the south of Building 245 could be removed. Building 244 could be demolished. Sixteen trees would likely be removed.

3. SELECTION CRITERIA: The following criteria were used to assemble alternatives. The facility that accommodates the commodities maintenance group's (309 CMXG) modification, repair, and maintenance functions should:

- Have sufficient space to house all of the necessary equipment and workers.
- Be located in close proximity to Building 238 to allow efficient completion of workload.
- Incorporate all currently-required technologies.
- Provide security measures for the various weapon system programs.
- Be protective of facilities, human health, and the environment.

4. ALTERNATIVES CONSIDERED OTHER THAN THE PROPOSED ACTION:

Under the no action alternative, it is predicted that Hill AFB may be unable to provide sufficient capacity for modification, repair, and overhaul functions of gas turbine engines (GTE) and secondary power systems for F-16, A-10, C-130, KC-135, C-5, F-5, T-38, C-3A, and F/A-22 aircraft. It is therefore possible that aircraft would be grounded, and mission requirements for sorties would not be met.


In addition to the proposed alternative, a third alternative would consist of constructing and operating the power systems facility to the south of Building 150. The main differences for this alternative would be the number of trees being removed to accommodate the new facility and parking lot, and removing a small park shelter of approximately 200 ft².

The 309 CMXG program managers evaluated, but eliminated, other potential locations for housing the required modification, repair, and overhaul activities. These alternatives were not retained for detailed consideration due to the specialized nature of USAF workload assignments to Hill AFB, and lack of other local facilities with sufficient space and/or security measures to accommodate the required workload.

5. SUMMARY OF ANTICIPATED ENVIRONMENTAL EFFECTS:

Issue	Alternative A No Action	Alternative B Proposed Action	Alternative C Alternate Location
Air Quality	No effects	<p>Construction equipment would create temporary emissions. Potential fugitive dust emissions would be mitigated. If Building 244 is demolished, asbestos abatement would be performed wherever indicated.</p> <p>The use of air filters, bake ovens, low temperature processes, and other control technologies would ensure long-term air emissions comply with all federal and state regulations.</p>	<p>Construction equipment would create temporary emissions. Potential fugitive dust emissions would be mitigated.</p> <p>The use of air filters, bake ovens, low temperature processes, and other control technologies would ensure long-term air emissions comply with all federal and state regulations.</p>
Solid and Hazardous Wastes	No effects	Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled.	Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled.
Biological Resources	No effects	Sixteen trees would be removed, and any birds using these trees would be displaced. New trees would be planted at a location approved by the Hill AFB natural resources manager.	Approximately 42 trees would be removed, and any birds using these trees would be displaced. New trees would be planted at a location approved by the Hill AFB natural resources manager.
Surface Soils	No effects	During construction, erosion would be controlled by implementing a stormwater pollution prevention plan. If contaminated soils are identified, they would be properly handled during the construction process.	During construction, erosion would be controlled by implementing a stormwater pollution prevention plan. If contaminated soils are identified, they would be properly handled during the construction process.

6. FINDING OF NO SIGNIFICANT IMPACT: Based on the above considerations, a Finding of No Significant Impact (FONSI) is appropriate for this assessment.

Approved by: 
HARRY BRIESTMASTER III, Colonel, USAF
Commander

Date: 31 Aug 2

EXECUTIVE SUMMARY

Purpose and Need

The purpose of the proposed action is to accommodate current United States Air Force (USAF) missions by constructing a new aircraft power systems repair transformation facility (power systems facility) in which to perform a greater number and variety of component level repairs of aircraft auxiliary drive engine and gearbox components.

The proposed action is needed for the modification, repair, and overhaul functions of gas turbine engines (GTE) and secondary power systems related to F-16, A-10, C-130, KC-135, C-5, F-5, T-38, C-3A, and F/A-22 aircraft. Due to changing technologies, increased workload, and the desire to repair components that are currently discarded, an additional power systems facility is needed to meet current and future operational requirements.

Scope of Review

During a scoping meeting and subsequent interactions, the following environmental issues were addressed:

- Air quality.
- Solid and hazardous wastes (including liquid waste streams).
- Biological resources.
- Geology and surface soils.
- Water quality.
- Cultural resources.
- Occupational safety and health.
- Air installation compatible use zone (AICUZ).
- Socioeconomic resources.

As explained in the body of this document, the issues that were identified for detailed consideration are: air quality; solid and hazardous wastes (including liquid waste streams); biological resources; and surface soils.

Selection Criteria

The facility that accommodates the commodities maintenance group's (309 CMXG) modification, repair, and maintenance functions should:

- Have sufficient space to house all of the necessary equipment and workers.
- Be located in close proximity to Building 238 to allow efficient completion of workload.
- Incorporate all currently-required technologies.
- Provide security measures for the various weapon system programs.
- Be protective of facilities, human health, and the environment.

Alternatives Considered in Detail

Alternative A (No Action Alternative) - The no action alternative would continue the current methods and levels of operation. Under the no action alternative, it is predicted that Hill AFB may be unable to provide sufficient capacity for modification, repair, and overhaul functions of GTE and secondary power systems for F-16, A-10, C-130, KC-135, C-5, F-5, T-38, C-3A, and F/A-22 aircraft. It is therefore possible that aircraft would be grounded, and mission requirements for sorties would not be met.

Alternative B (Proposed Action - Construct the Power Systems Facility in the vicinity of Building 245) - The proposed power systems facility and associated parking lot would be located in the vicinity of Building 245, comprising approximately 3.4 acres. A portion of the existing parking lot to the south of Building 245 could be removed. Building 244 could be demolished. Sixteen trees would likely be removed. The activities to be conducted within the power systems facility would include:

- Machine shop processes for aluminum, titanium, alloys of steel.
- Thermal spray coating of metal parts.
- Blast booths.
- Electroless nickel plating.
- Non-destructive inspection (NDI).
- Welding.
- Final touch-up cleaning of parts to be shipped.

Alternative C (Construct the Power Systems Facility to the South of Building 150) - Alternative C would consist of constructing and operating the same new power systems facility as the proposed action. The location for Alternative C would be to the south of Building 150. The main differences for Alternative C would be the number of trees being removed to accommodate the new facility and parking lot, and removing a small park shelter of approximately 200 ft².

Decisions That Must Be Made

Hill AFB must decide which alternative to select:

- Do not construct a new power systems facility (no action).
- Construct a new power systems facility in the vicinity of Building 245.
- Construct a new power systems facility to the south of Building 150.

Results of the Environmental Assessment

Alternatives A, B, and C were all considered in detail. The results of the environmental assessment are summarized in the following table.

Summary Comparison of Alternatives

Issue	Alternative A No Action	Alternative B Proposed Action	Alternative C Alternate Location
Air Quality	No effects	<p>Construction equipment would create temporary emissions. Potential fugitive dust emissions would be mitigated. If Building 244 is demolished, asbestos abatement would be performed wherever indicated.</p> <p>The use of air filters, bake ovens, low temperature processes, and other control technologies would ensure long-term air emissions comply with all federal and state regulations.</p>	<p>Construction equipment would create temporary emissions. Potential fugitive dust emissions would be mitigated.</p> <p>The use of air filters, bake ovens, low temperature processes, and other control technologies would ensure long-term air emissions comply with all federal and state regulations.</p>
Solid and Hazardous Wastes	No effects	Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled.	Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled.
Biological Resources	No effects	Sixteen trees would be removed, and any birds using these trees would be displaced. New trees would be planted at a location approved by the Hill AFB natural resources manager.	Approximately 42 trees would be removed, and any birds using these trees would be displaced. New trees would be planted at a location approved by the Hill AFB natural resources manager.
Surface Soils	No effects	During construction, erosion would be controlled by implementing a stormwater pollution prevention plan. If contaminated soils are identified, they would be properly handled during the construction process.	During construction, erosion would be controlled by implementing a stormwater pollution prevention plan. If contaminated soils are identified, they would be properly handled during the construction process.

Identification of the Preferred Alternative

Hill AFB prefers Alternative B (the proposed action).

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LIST OF ACRONYMS AND CHEMICAL TERMS

AFB	Air Force Base
AFOSH	Air Force Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zone
bgs	Below the Ground Surface
BTU	British Thermal Unit
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CMXG	Commodities Maintenance Group
CO	Carbon Monoxide
CWA	Clean Water Act
DAQ	Division of Air Quality (Utah)
dBA	Decibel (A-weighted)
DRMO	Defense Reutilization and Marketing Office
DWQ	Division of Drinking Water Quality (Utah)
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency (United States)
FONSI	Finding of No Significant Impact
ft ²	Square Feet
GTE	Gas Turbine Engine
HAP	Hazardous Air Pollutant
HEPA	High-Efficiency Particulate Air
hr	Hour
HVOF	High Velocity Oxygen Fuel
IRP	Installation Restoration Program
IWTP	Industrial Wastewater Treatment Plant
MILCON	Military Construction
MXW	Aircraft Maintenance Wing
NAAQS	National Ambient Air Quality Standards

NDCSD	North Davis County Sewer District
NDI	Non-Destructive Inspection
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NO _x	Oxides of Nitrogen
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PM-10	Particulates Smaller Than 10 Microns in Diameter
PM-2.5	Particulates Smaller Than 2.5 Microns in Diameter
ppm	Parts Per Million
RCRA	Resource Conservation and Recovery Act
RD	Requirements Document
ROD	Record of Decision
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SO _x	Oxides of Sulfur
TES	Threatened Endangered or Sensitive
TIG	Tungsten Inert Gas
UAC	Utah Administrative Code
UBC	Uniform Building Code
UPDES	Utah Pollutant Discharge Elimination System
US	United States
USAF	United States Air Force
VOC	Volatile Organic Compound
WFRC	Wasatch Front Regional Council

1 PURPOSE OF AND NEED FOR ACTION

1.1 Proposed Action

Hill Air Force Base (AFB) is located approximately twenty five miles north of downtown Salt Lake City and seven miles south of downtown Ogden, Utah (Figure 1). Hill AFB is surrounded by several communities: Roy and Riverdale to the north; South Weber to the northeast; Layton to the south; and Clearfield, Sunset, and Clinton to the west. The base lies primarily in northern Davis County with a small portion located in southern Weber County.

Hill AFB has worldwide engineering, sustainment and logistics management and maintenance support responsibilities for some of the Air Force's most sophisticated weapon systems. The Commodities Maintenance Group (309 CMXG) of the 309 Aircraft Maintenance Wing (309 MXW) at Hill AFB proposes to construct a new aircraft power systems repair transformation facility (power systems facility) in the vicinity of Building 245 on Hill AFB (Figure 2).

Additional details regarding the proposed action and alternatives to the proposed action are presented in Sections 1.3 and 2.2 of this document.

1.2 Need for the Action

Hill AFB is designated as the technical repair center for gas turbine engines (GTE) and secondary power systems for F-16, A-10, C-130, KC-135, C-5, F-5, T-38, C-3A, and F/A-22 aircraft.

The proposed action is needed for the modification, repair, and overhaul functions of GTE and secondary power systems directly related to the aircraft mentioned in the preceding paragraph. Currently, these operations are performed at Hill AFB in Building 238. Due to changing technologies, increased workload, and the desire to repair components that are currently discarded, an additional power systems facility is needed to meet current and future operational requirements.

With new technology and equipment provided by the proposed facility, the quality and efficiency of the work would match or exceed similar commercially-available work at substantially lower cost to the Air Force.

1.3 Purpose of the Action

There are three major components to the purpose of the proposed action (Hill 2006a).

- The proposed action would provide 309 CMXG with a facility in which to perform a greater number and variety of component level repairs of aircraft auxiliary drive engine and gearbox components than current resources (currently housed in Building 238) can accomplish.

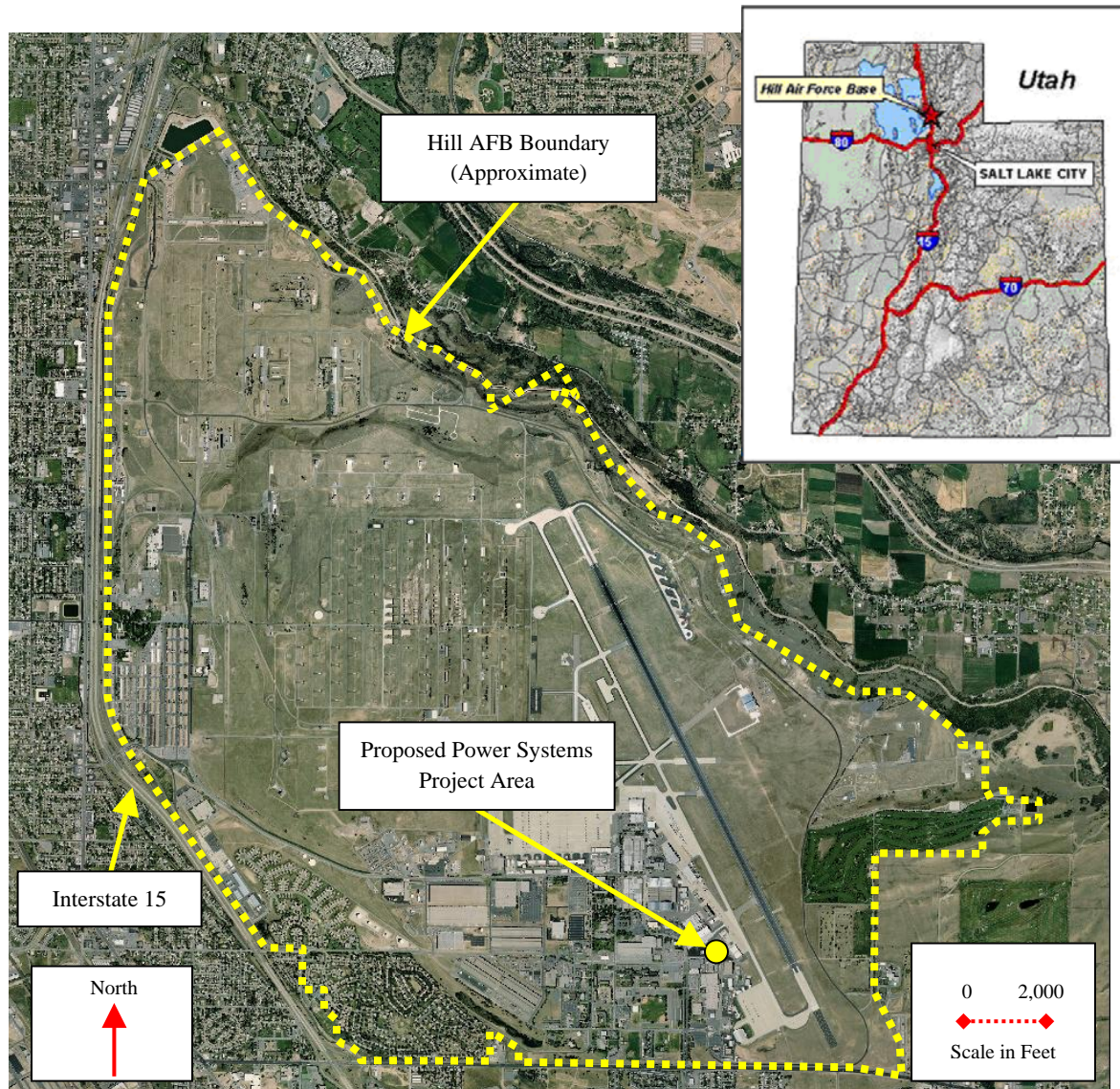


Figure 1: Location of the Proposed Action on Hill AFB

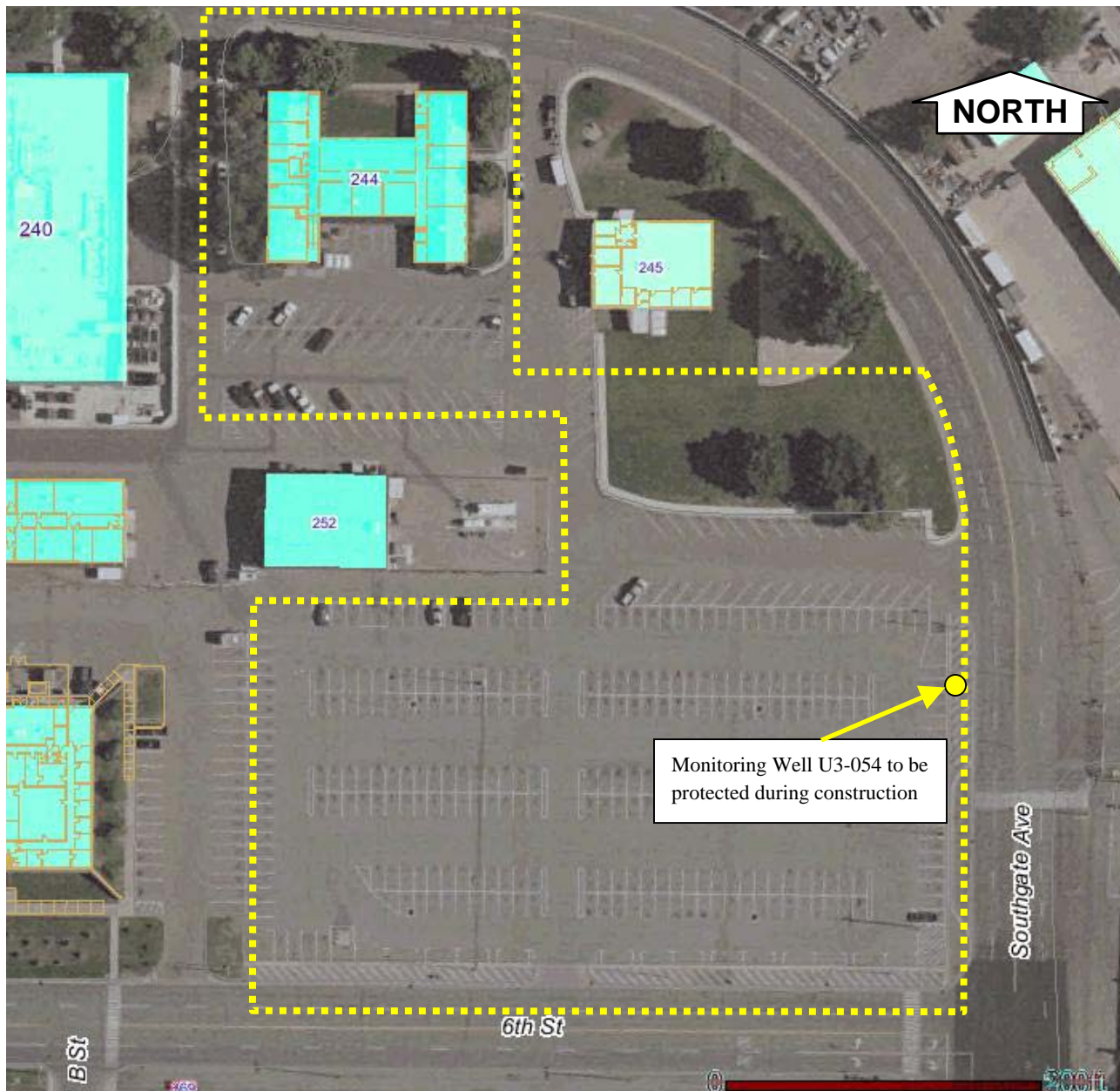


Figure 2: Boundary Within Which the Proposed Action Would Be Constructed

- The proposed action would shorten the elapsed time for overhauling engines from 150 days to 75 days and would increase throughput from three to eight engines per week, enabling aircraft to return to their home units much sooner than is currently possible.
- The proposed action would enable 309 CMXG to repair components that are currently discarded, resulting in an estimated savings of \$4,000,000 per year.

1.4 Alternative Selection Criteria

Due to the considerations presented in the preceding sections, the following selection criteria were established. The facility that accommodates 309 CMXG modification, repair, and overhaul functions described in this document should:

- have sufficient space to house all of the necessary equipment and workers;
- be located in close proximity to Building 238 to allow efficient completion of workload;
- incorporate all currently-required technologies;
- provide security measures for the various weapon system programs; and
- be protective of facilities, human health, and the environment.

1.5 Relevant Plans, EISs, EAs, Laws, Regulations, and Other Documents

During the scoping process, no relevant plans or environmental impact statements (EISs) were identified.

One relevant environmental assessment (EA) was completed during 2006. The title of the previous EA was *Final Environmental Assessment: Proposed Renovation of Building 238, Hill Air Force Base, Utah*. The previous EA analyzed activities that are conducted by 309 MXW in Building 238 that are closely related to the activities being discussed in this document. The environmental analysis for the activities in Building 238 resulted in preparation of a finding of no significant impact (FONSI).

The following federal, state, and local laws, regulations, and permits would apply to the proposed action:

- The National Environmental Policy Act (NEPA) of 1969.
- Council on Environmental Quality regulations.
- United States Air Force (USAF)-specific requirements contained in Title 32 of the Code of Federal Regulations (CFR) Part 989, Environmental Impact Analysis Process (EIAP).
- Safety guidelines of the Occupational Safety and Health Administration (OSHA).
- Relevant Air Force occupational safety and health (AFOSH) standards.
- Utah's fugitive emissions and fugitive dust rules (Utah Administrative Code [UAC] Section R307-309).
- Utah's State Implementation Plan (UAC Section R307-110), which complies with the General Conformity Rule of the Clean Air Act (CAA), Section 176 (c).

- Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 CFR 93.154.
- The Hill AFB Title V Operating Permit (Permit Number: 1100007001).
- If asbestos abatement would occur, UAC, Section R307-801 would apply.
- The Resource Conservation and Recovery Act (RCRA) and similar laws.
- A federal facility agreement under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).
- Utah hazardous waste management regulations contained in UAC Section R315, and the Hill AFB *Hazardous Waste Management Plan*.
- An industrial pretreatment permit issued by the North Davis County Sewer District (NDCSD).
- The Clean Water Act (CWA) and the Utah Pollutant Discharge Elimination System (UPDES).
- The Hill AFB *Integrated Cultural Resources Management Plan*.

The current version of a military construction (MILCON) brochure was reviewed for the proposed action. The title of the MILCON brochure (Hill 2006a) is *Aircraft Power Systems Repair Transformation Facility (KRSM 073004)*.

The current version of a requirements document (RD) was reviewed for the proposed action. The title of the RD is *FY 08 MILCON, Aircraft Power Systems Repair Transformation Facility, Hill AFB, Utah, KRSM 073004*.

During the scoping process, no other documents were identified as being relevant to the proposed action.

1.6 Decisions That Must Be Made

Hill AFB must decide whether to:

- not construct a new power systems facility (no action);
- construct a new power systems facility in the vicinity of Building 245; or
- construct a new power systems facility to the south of Building 150.

If Hill AFB decides to construct a new power systems facility, the proponent and environmental managers would then decide what mitigation and/or monitoring measures, if any, should be implemented.

If Hill AFB decides to construct a new power systems facility, the base would then decide if the selected alternative would or would not be a major federal action significantly affecting the quality of the human environment. If judged as not significantly affecting the quality of the human environment, then a FONSI would be prepared and signed, and the project would proceed. If judged as significantly affecting the quality of the human environment, then an EIS and a record of decision (ROD) would have to be prepared and signed before the project could proceed.

1.7 Scope of this Environmental Analysis

The scope of the current environmental analysis is to explore environmental issues related to the proposed action (construct a new aircraft power systems facility) and the reasonable alternatives identified within this document.

1.7.1 History of the Planning and Scoping Process

Scoping discussions were held: to identify potential environmental concerns; to facilitate an efficient environmental analysis process; to identify issues and alternatives that would be considered in detail while devoting less attention and time to less important issues; and to save time in the overall process by helping to ensure that draft documents would adequately address relevant issues, thereby reducing the possibility that comments would cause a document to be substantially rewritten.

On November 2, 2006, an initial scoping meeting was conducted in Building 5, Hill AFB. Attendees included proponents of the proposed action, managers of Hill AFB's NEPA program, other environmental program manager, and the authors of this document.

During this meeting and subsequent scoping interaction, the following environmental issues were addressed:

- air quality;
- solid and hazardous wastes (including liquid waste streams);
- biological resources;
- geology and surface soils;
- water quality;
- cultural resources;
- occupational safety and health;
- air installation compatible use zone (AICUZ); and
- socioeconomic resources.

1.7.2 Issues Studied in Detail

The issues that have been identified for detailed consideration and are therefore presented in Sections 3 and 4 are:

- **Air Quality** (attainment status, emissions, Utah's state implementation plan [SIP])

Air emissions would be produced by construction equipment. Asbestos abatement could be required. Operating the proposed action would create regulated air emissions. Air quality effects are discussed in Section 4 of this document.

- **Solid and Hazardous Wastes** (materials to be used, stored, recycled, disposed, including liquid waste streams; existing asbestos, lead-based paint, mercury, and polychlorinated biphenyls [PCBs])

During construction, solid wastes would be generated, wastes containing lead-based paint would be generated, and other hazardous wastes might be generated that would require proper treatment and/or disposal. Additional hazardous wastes could be generated if a spill of fuel, lubricants, or construction-related chemicals were to occur. For the purposes of this document, if the word construction is used by itself, any potential demolition activities are included.

Operating the proposed action would create solid and hazardous wastes (to include solid and liquid wastes). Effects related to solid and hazardous wastes are discussed in Section 4 of this document.

- **Biological Resources** (threatened, endangered, sensitive species, wetlands, floodplains)

No species of plants or animals listed as threatened, endangered, or sensitive (TES) are known to occur on Hill AFB (Hill 2005a; Hill 2005b). No species of plants or animals listed as TES by state or federal agencies were observed in or around the proposed project area, and no suitable habitat for any such species would likely to be disturbed by the proposed action. There are no wetlands or floodplains in the vicinity of the proposed action.

Mature trees would be removed if the proposed action is implemented. Effects related to biological resources are discussed in Section 4 of this document.

- **Surface Soils** (land disturbance, known pre-existing contamination)

Excavations would be necessary to install: footings; industrial drain lines; and miscellaneous cables, conduit, and pipes. Based on the RD that was prepared for the proposed action, the land area to be disturbed would be approximately three acres in size. The proposed action would therefore be covered under Utah's general construction permit rule for stormwater compliance (preventing soil erosion). Prior to initiating any construction activities, this permit must be

obtained and erosion and sediment controls must be installed according to a stormwater pollution prevention plan.

Contamination of shallow soil is not believed to exist in the vicinity of the proposed action. Effects to surface soils related to preventing soil erosion and potential soil contamination are discussed in Section 4 of this document.

1.7.3 Issues Eliminated From Further Study

The issues that were not carried forward for detailed consideration in Sections 3 and 4 are:

- **Geology** (seismicity, topography, minerals, geothermal resources)

The scoping discussions did not identify any issues related to seismicity, topography, minerals, or geothermal resources.

- **Water Quality** (groundwater, water quantity, wellhead protection zones)

No surface water resources exist within the immediate area of the proposed action. Contamination of groundwater is known to exist approximately 115 feet below the ground surface (bgs) in the vicinity of the proposed action. Since the proposed action would not require excavations deeper than 20 feet bgs, no groundwater effects were identified in relation to the proposed action. Groundwater monitoring well U3-054, near the eastern boundary of the proposed action (Figure 2), should be protected during construction activities.

The scoping discussions did not identify any issues related to quantity of water or wellhead protection zones.

Liquid waste streams created during construction and from operating the proposed action are included in the discussions related to solid and hazardous wastes (Section 4 of this document).

Discussions related to stormwater pollution prevention (preventing soil erosion) are included in the discussions related to surface soils (Section 4 of this document).

- **Cultural Resources** (archaeological, architectural, traditional cultural properties)

The proposed construction is not expected to contact any cultural resources. If suspected or actual cultural resources should be observed during construction, work in the immediate vicinity would stop, and the Hill AFB cultural resources manager would implement inadvertent discovery procedures in accordance with the Hill AFB *Integrated Cultural Resources Management Plan*.

- **Occupational Safety and Health** (physical and chemical hazards, radiation, explosives, bird and wildlife hazards to aircraft)

Throughout the construction phase of the project, Hill AFB contractors would follow OSHA safety guidelines as presented in the CFR. Hazardous materials that could be used or disturbed during construction are included in the discussions related to solid and hazardous wastes (Section 4 of this document).

Related to Hill AFB military personnel and civilian employees, the Bio-environmental Engineering Flight (75 AMDS/SGPB) is responsible for implementing AFOSH standards. The AFOSH program addresses (partial list): hazard abatement; hazard communication; training; personal protective equipment and other controls to ensure that occupational exposures to hazardous agents do not adversely affect health and safety; and acquisition of new systems.

The scoping discussions did not identify any issues related to occupational safety and health that would not be routinely addressed by OSHA rules and/or the Bio-engineering Flight.

- **AICUZ** (noise, accident potential, airfield encroachment)

The proposed action lies in the 84 A-weighted decibel (dBA) noise level zone (documented in the current version of the Hill AFB AICUZ report). The primary source is external jet noise from the Hill AFB runway. At this noise level, appropriate noise reduction must be assured, based on the specific activities to be conducted in each work area. The external jet noise would be addressed by incorporating noise level reduction measures into construction design, in compliance with the Uniform Building Code (UBC) Chapter 35, and the current version of the Hill AFB AICUZ report. Since noise mitigation measures would be provided by design engineers through structural controls, noise effects will not be addressed in a detailed fashion in this document.

The scoping discussions did not identify any issues related to aircraft accident potential or airfield encroachment.

- **Socioeconomic Resources** (local fiscal effects including employment; population projections; schools)

Short-term opportunities would exist for local construction workers. The proposed action is expected to create 112 long-term jobs at Hill AFB for individuals with technical skills related to aviation and mechanical equipment repair. The scoping discussions did not identify any issues related to population projections or schools.

1.8 Applicable Permits, Licenses, and Other Coordination Requirements

References to applicable permits and licenses are included in Section 1.5 of this document.

The proponents would coordinate with the Hill AFB hazardous materials program manager (organizational symbol 75 CEG/CEVC) to discuss hazardous materials brought on base to construct the proposed action and to be used in the proposed power systems facility.

1.9 Overview of the Organization of the Document

The remainder of this document consists of the following sections:

Section 2 presents the no action alternative, the proposed action, and reasonable alternatives to the proposed action. It discusses the process used to develop the alternatives, and compares (in a brief summary fashion) the alternatives and their expected effects. Finally, this section states the Air Force's preferred alternative.

Section 3 discusses the existing conditions of the potentially affected environment, establishing a resource baseline against which the effects of the various alternatives can be evaluated. It presents relevant facilities and operations, environmental issues, pre-existing environmental factors, and existing cumulative effects due to human activities in the vicinity of the proposed action or the alternative locations.

Section 4 is organized by the issues to be studied in detail (see Section 1.7.2), and it presents the technical analyses and probable consequences due to implementing (for each issue) the no action alternative, the proposed action, and reasonable alternatives to the proposed action. Section 4 discusses potential effects (direct, indirect, cumulative, short-term, long-term, beneficial, and adverse), as well as identifying any irreversible and irretrievable commitments of resources.

Section 5 is the list of persons who primarily or assisted in preparing this EA.

Section 6 contains a list of references to the citations made in this document.

Section 7 is the list of agencies, organizations, and persons consulted during preparation of this EA.

2.0 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2.1 Introduction

This section presents, for each alternative being considered in detail (no action, the proposed action, and one alternate location): the principal actions associated with the alternative; any indicated mitigation and monitoring techniques; past relevant actions; present relevant actions not part of the alternative; and reasonably foreseeable relevant actions not part of the alternative. This section discusses the process used to develop the alternatives, and compares (in a brief summary fashion) the alternatives and their expected effects. Finally, this section states the Air Force's preferred alternative.

2.2 Description of Alternatives

2.2.1 Alternative A: No Action

2.2.1.1 Principal Actions of Alternative A

The no action alternative would be to continue the current methods and levels of operation. Under the no action alternative, it is predicted that Hill AFB may be unable to provide sufficient capacity for modification, repair, and overhaul functions of GTE and secondary power systems for F-16, A-10, C-130, KC-135, C-5, F-5, T-38, C-3A, and F/A-22 aircraft. It is therefore possible that aircraft would be grounded, and mission requirements for sorties would not be met.

2.2.1.2 Mitigation and Monitoring

During scoping discussions and subsequent analysis, no mitigation or monitoring techniques were identified for the no action alternative.

2.2.1.3 Past Relevant Actions

One past relevant action was identified for the no action alternative. A recent EA and FONSI (completed during 2006) approved renovation of Building 238, and upgrades to the power system activities being conducted in Building 238. However, the 309 CMXG program managers projected large shortfalls in capability and capacity when comparing the improved Building 238 operations to desired outcomes and projected workloads.

2.2.1.4 Present Relevant Actions Not Part of Alternative A

During scoping discussions and subsequent analysis, no present relevant actions not part of the no action alternative were identified.

2.2.1.5 Reasonably Foreseeable Relevant Actions Not Part of Alternative A

During scoping discussions and subsequent analysis, no reasonably foreseeable relevant actions not part of the no action alternative were identified.

2.2.2 Alternative B: Proposed Action - Construct the Power Systems Facility in the Vicinity of Building 245

2.2.2.1 Principal Actions of Alternative B

The proposed power systems facility and associated parking lot would be located in the vicinity of Building 245, comprising approximately 3.4 acres. A portion of the existing parking lot to the south of Building 245 could be removed. Sixteen trees would likely be removed, and if so, replaced with new trees at a location approved by the Hill AFB natural resources manager. Building 244 could be demolished. Utilities would need to be constructed and/or relocated.

A two-story, medium bay facility (24-feet high) of 31,500 square feet (ft²) would be constructed (total of the ground floor and a partial second floor). The building would consist of reinforced concrete footings, foundations and floor slab, engineered steel structure and insulated steel wall panels with partial masonry veneer, standing seam metal roof, fire detection/protection, heating, ventilation and air conditioning systems. Necessary supporting facilities including utilities, site improvements, pavements, and communication support would be provided. If Building 244 is demolished, the new power systems facility would be constructed where Building 244 is currently located.

The activities to be conducted within the power systems facility would include:

- machine shop processes for aluminum, titanium, alloys of steel;
- thermal spray coating of metal parts;
- blast booths;
- electroless nickel plating;
- non-destructive inspection (NDI);
- welding; and
- final touch-up cleaning of parts to be shipped.

2.2.2.2 Mitigation and Monitoring

Fugitive emissions from construction activities would be mitigated according to UAC Section R307-205, Emission Standards: Fugitive Emissions and Fugitive Dust and the Hill AFB *Fugitive Dust Plan*. To mitigate the removal of 16 trees, new trees would be planted at a location approved by the Hill AFB natural resources manager. Hill AFB construction specifications would mitigate any erosion potential that does exist by requiring the contractor to restore the land to its original condition. No monitoring requirements were identified.

2.2.2.3 Past Relevant Actions

One past relevant action was identified for the proposed action. A recent EA and FONSI (completed during 2006) approved renovation of Building 238, and upgrades to the power system activities being conducted in Building 238. However, the 309 CMXG program managers projected large shortfalls in capability and capacity when comparing the improved Building 238 operations to desired outcomes and projected workloads.

2.2.2.4 Present Relevant Actions Not Part of Alternative B

During scoping discussions and subsequent analysis, no present relevant actions not part of the proposed action were identified.

2.2.2.5 Reasonably Foreseeable Relevant Actions Not Part of Alternative B

During scoping discussions and subsequent analysis, no reasonably foreseeable relevant actions not part of the proposed action were identified.

2.2.3 Alternative C: Construct the Power Systems Facility to the South of Building 150

2.2.3.1 Principal Actions of Alternative C

Alternative C would consist of constructing and operating the same new power systems facility as the proposed action. The location for Alternative C would be to the south of Building 150 (Figure 3). The main differences for Alternative C would be the number of trees being removed to accommodate the new facility and parking lot, and removing a small park shelter of approximately 200 ft². No demolition of structures would occur.

2.2.3.2 Mitigation and Monitoring

Fugitive emissions from construction activities would be mitigated according to UAC Section R307-205, Emission Standards: Fugitive Emissions and Fugitive Dust and the Hill AFB *Fugitive Dust Plan*. To mitigate the removal of approximately 42 trees, new trees would be planted at a location approved by the Hill AFB natural resources manager. Hill AFB construction specifications would mitigate any erosion potential that does exist by requiring the contractor to restore the land to its original condition. No monitoring requirements were identified.

2.2.3.3 Past Relevant Actions

One past relevant action was identified for Alternative C. A recent EA and FONSI (completed during 2006) approved renovation of Building 238, and upgrades to the power system activities being conducted in Building 238. However, the 309 CMXG program managers projected large shortfalls in capability and capacity when comparing the improved Building 238 operations to desired outcomes and projected workloads.



Figure 3: Boundary Within Which Alternative C Would Be Constructed

2.2.3.4 Present Relevant Actions Not Part of Alternative C

During scoping discussions and subsequent analysis, no present relevant actions not part of Alternative C were identified.

2.2.3.5 Reasonably Foreseeable Relevant Actions Not Part of Alternative C

During scoping discussions and subsequent analysis, no reasonably foreseeable relevant actions not part of Alternative C were identified.

2.3 Process Used to Develop the Alternatives

2.3.1 History of and Development Process for Alternatives

As discussed in Sections 1.1 through 1.3 of this document, Hill AFB is the Air Force's designated location for undertaking the modification, repair, and overhaul functions of GTE and secondary power systems for a variety of military aircraft. Hill AFB is the Air Force's primary location for accomplishing the required power systems workload, and Hill AFB has been selected as the USAF secondary power systems center of excellence. Hill AFB is the primary Air Force location for power systems overhaul and repair (including but not limited to GTE, jet fuel starters, air turbine starters, accessory drive gear boxes, airframe mounted accessory drive gear boxes, and power takeoff shafts) in accordance with USAF mission requirements and technical order specifications. Hill AFB is the only USAF facility with the capability or assignment to repair secondary power systems for F-16, A-10, C-130, KC-135, C-5, F-5, T-38, C-3A, and F/A-22 aircraft.

Due to these considerations, the process used to develop the alternatives was limited to potential locations on or near Hill AFB. The 309 CMXG program managers then investigated potential locations for siting the new power systems facility.

2.3.2 Alternatives Eliminated From Detailed Study

No off-site local industrial facility exists (for example at Freeport Center in Clearfield, Utah) with sufficient space and/or security measures to accommodate the previously described workload.

No other building exists on Hill AFB that could accommodate this workload, either in its current condition or by being renovated.

At least 13 locations on Hill AFB were considered for siting the new power systems facility. Meetings were held at Hill AFB involving the 309 CMXG program managers, base civil engineers, the facilities planning committee, and the facilities board. All but two of the alternatives were eliminated from detailed study for reasons of proximity to Building 238 (see the selection criteria in Section 1.4) and/or best use for parcels of available Hill AFB land within the established industrial zone.

2.4 Summary Comparison of the Activities, the Predicted Achievement of the Project Objectives and the Predicted Environmental Effects of All Alternatives

2.4.1 Summary Comparison of Project Activities

The no action alternative would be to continue the current methods and levels of operation.

Under both Alternatives B (proposed action - construct the power systems facility in the vicinity of Building 245) and C (construct the power systems facility to the south of Building 150), a proposed power systems facility and associated parking lot would be constructed, comprising approximately 3.4 acres. The facility would enable Hill AFB to complete additional component level repairs of aircraft auxiliary drive engine and gearbox components.

2.4.2 Summary Comparison of Predicted Achievement of Project Objectives

Project Objective	Alternative A No Action	Alternative B Proposed Action	Alternative C Alternate Location
Have sufficient space to house all of the necessary equipment and workers	No	Yes	Yes
Be located in close proximity to Building 238 to allow efficient completion of workload	Yes	Yes	Yes
Incorporate all currently-required technologies	No	Yes	Yes
Provide security measures for the various weapon system programs	Yes	Yes	Yes
Be protective of facilities, human health, and the environment	Yes	Yes	Yes

Table 1: Summary Comparison of Predicted Achievement of Project Objectives

2.4.3 Summary Comparison of Predicted Environmental Effects

Issue	Alternative A No Action	Alternative B Proposed Action	Alternative C Alternate Location
Air Quality	No effects	<p>Construction equipment would create temporary emissions. Potential fugitive dust emissions would be mitigated. If Building 244 is demolished, asbestos abatement would be performed wherever indicated.</p> <p>The use of air filters, bake ovens, low temperature processes, and other control technologies would ensure long-term air emissions comply with all federal and state regulations.</p>	<p>Construction equipment would create temporary emissions. Potential fugitive dust emissions would be mitigated.</p> <p>The use of air filters, bake ovens, low temperature processes, and other control technologies would ensure long-term air emissions comply with all federal and state regulations.</p>
Solid and Hazardous Wastes	No effects	Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled.	Solid and liquid wastes containing regulated substances would all be properly contained, stored, transported, disposed, re-used, and/or recycled.
Biological Resources	No effects	Sixteen trees would be removed, and any birds using these trees would be displaced. New trees would be planted at a location approved by the Hill AFB natural resources manager.	Approximately 42 trees would be removed, and any birds using these trees would be displaced. New trees would be planted at a location approved by the Hill AFB natural resources manager.
Surface Soils	No effects	During construction, erosion would be controlled by implementing a stormwater pollution prevention plan. If contaminated soils are identified, they would be properly handled during the construction process.	During construction, erosion would be controlled by implementing a stormwater pollution prevention plan. If contaminated soils are identified, they would be properly handled during the construction process.

Table 2: Summary Comparison of Predicted Environmental Effects

2.5 Identification of the Preferred Alternative

Hill AFB prefers Alternative B (the proposed action).

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

Section 3 of this document discusses the existing conditions of the potentially affected environment, establishing a resource baseline against which the effects of the various alternatives can be evaluated. It presents relevant facilities and operations, environmental issues, pre-existing environmental factors, and existing cumulative effects due to human activities in the vicinity of the proposed action or the alternative locations.

Issues discussed during scoping meetings, but eliminated from detailed consideration (see Section 1.7.3) include:

- geology (seismicity, topography, minerals, geothermal resources);
- water quality (groundwater, water quantity, wellhead protection zones);
- cultural resources (archaeological, architectural, traditional cultural properties);
- occupational safety and health (physical and chemical hazards, radiation, explosives, bird and wildlife hazards to aircraft);
- AICUZ (noise, accident potential, airfield encroachment); and
- socioeconomic resources (local fiscal effects including employment; population projections; schools).

3.2 Description of Relevant Facilities and Operations

Related to Alternative B (the proposed action), the existing parking lot and Building 244 would be relevant facilities. Building 244 is used for classroom training activities.

Related to Alternative C, the existing park and the small park shelter of approximately 200 ft² would be relevant facilities.

Related to Alternatives B and C, 309 CMXG currently performs component level repairs of aircraft auxiliary drive engine and gearbox components in Building 238. The 309 CMXG managers have stated the facility that accommodates the 309 CMXG modification, repair, and overhaul functions should be located in close proximity to Building 238 to allow efficient completion of workload.

3.3 Description of Relevant Affected Issues

3.3.1 Air Quality

Hill AFB is located in Davis and Weber Counties, Utah. Neither county is in complete attainment status with federal clean air standards (Figure 4). Nonattainment areas fail to meet

national ambient air quality standards (NAAQS) for one or more of the criteria pollutants: oxides of nitrogen (NO_x), sulfur dioxide (SO₂), ozone (O₃), particulates less than 10 microns in diameter (PM-10), particulates less than 2.5 microns in diameter (PM-2.5), carbon monoxide (CO), and lead. Davis County (the county in which the proposed action lies) is currently designated as a maintenance area for ozone. Due to this designation, emission offsets are required for new sources emitting NO_x and volatile organic compounds (VOCs), which are precursors to ozone formation.

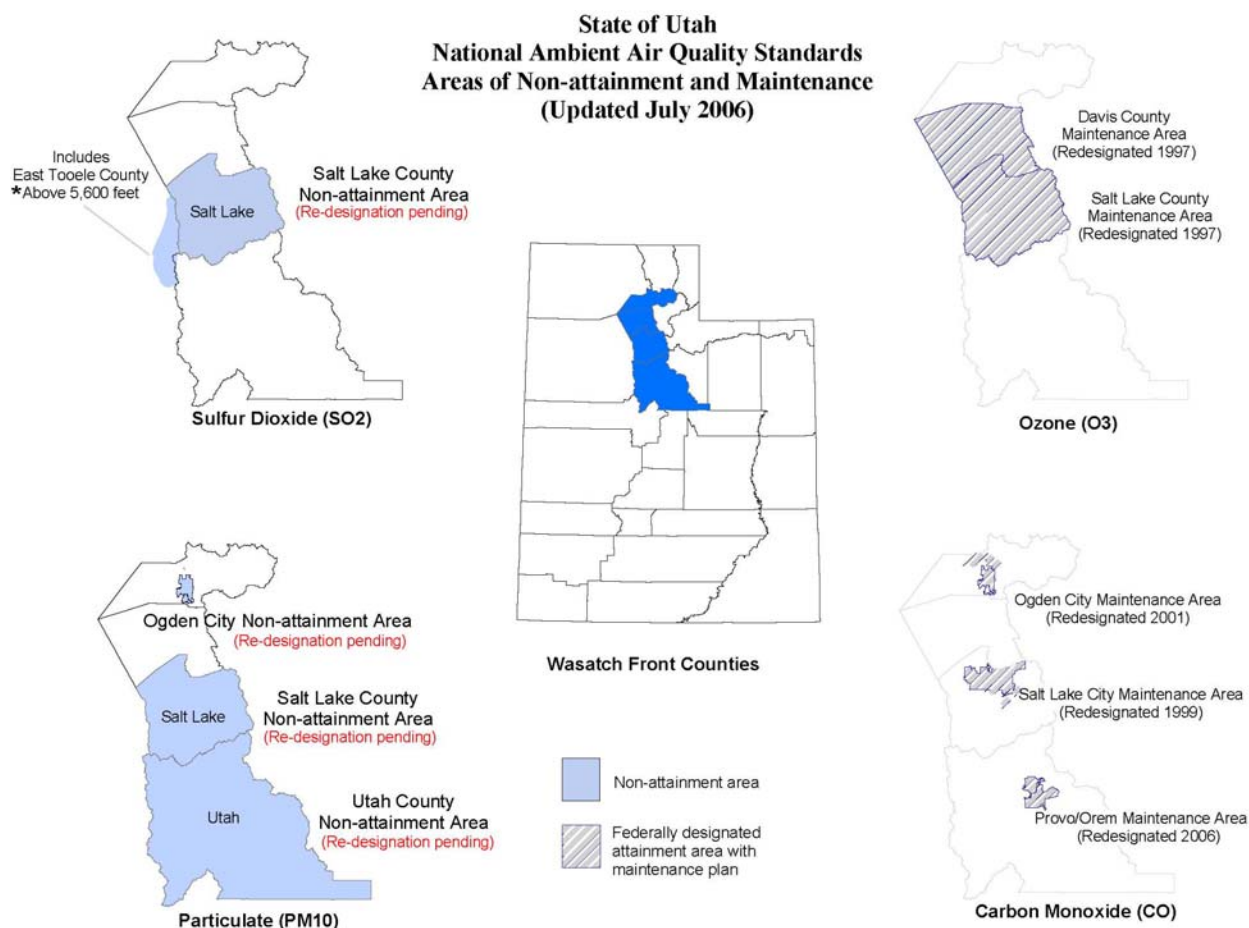


Figure 4: State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance

The current air quality trend at Hill AFB is one of controlling emissions as Hill AFB managers implement programs to eliminate ozone-depleting substances, limit use of VOCs, switch to lower vapor pressure solvents and aircraft fuel, convert internal combustion engines from gasoline and diesel to natural gas, and improve the capture of particulates during painting and abrasive blasting operations (in compliance with the base's Title V air quality permit).

Related to the three alternatives discussed in this document, various similar aircraft modification, repair, and maintenance activities are currently conducted in Building 238. All of the processes

in Building 238 that create regulated air emissions (e.g., abrasive blasting; chemical- and aqueous-based cleaning; vapor degreasing; cutting; painting) comply with United States (US) Environmental Protection Agency (EPA) and Utah Division of Air Quality (DAQ) regulations, and with the base's Title V air quality permit.

An initial asbestos assessment of Building 244 was performed April 5, 2007. Forty three samples were collected from available surfaces. Destructive sampling has not yet been approved or performed. No asbestos was detected in the samples from available surfaces. Areas not sampled include behind the exterior siding, and the crawl space.

3.3.2 Solid and Hazardous Wastes

In general, hazardous wastes include substances that, because of their concentration, physical, chemical, or other characteristics, may present substantial danger to public health or welfare or to the environment when released into the environment or otherwise improperly managed. Potentially hazardous and hazardous wastes generated at Hill AFB are managed as specified in the *Hill AFB Hazardous Waste Management Plan* with oversight by personnel from the Environmental Management Division and the Defense Reutilization and Marketing Office (DRMO). Hazardous wastes at Hill AFB are properly stored during characterization, and then manifested and transported off site for treatment and/or disposal.

Related to the three alternatives discussed in this document, all of the similar aircraft modification, repair, and maintenance activities that are currently conducted in Building 238 comply with EPA and Utah regulations, and with the base's relevant permits (RCRA Part B permit, industrial pretreatment permit).

An initial lead-based paint assessment of Building 244 was performed April 5, 2007. Lead-based paint was detected in 8,000 ft² of building exterior, on the foundation, and on ceramic tile.

Regarding a release of jet fuel near Building 240 on January 6, 2004, Hill AFB environmental managers transmitted a letter to Utah's Division of Solid and Hazardous Waste on January 13, 2004 stating:

- approximately 1,500 gallons of jet fuel were released;
- 700 - 1000 gallons were recovered in liquid form;
- fuel contaminated snow and ice were recovered;
- sorbent materials were employed to recover additional fuel; and
- fuel that flowed to the storm drain was later recovered by flushing the storm drain.

During a site visit on April 12, 2007, a concrete gutter was observed to slope from the southeast corner of Building 240 (the area of the release) toward the north and a storm drain inlet on Southgate Avenue. It also appeared that any fuel migrating somewhat to the east would have

remained on paved surfaces until it was also directed north to a second storm drain inlet on Southgate Avenue (east of and across the driveway from the first inlet).

Based on the flow paths, the paved surfaces, the documented spill response and recovery, and the subsequent flushing of the storm drain, it does not appear that the January 6, 2004 release of jet fuel near Building 240 would have created any special concern for pre-existing contaminated soils near Buildings 240, 244, or 252.

3.3.3 Biological Resources

As stated in Section 1.7.2, no species of plants or animals listed as TES are known to occur on Hill AFB. There are no wetlands or floodplains in the vicinity of the three alternatives discussed in this document. All three alternatives discussed in this document are in close proximity to one another, in a developed area on Hill AFB, with primarily industrial land uses nearby.

Sixteen trees exist within the footprint of the proposed action (see Figure 2):

- two Austrian pines;
- two Siberian elms;
- six Norway maples;
- one Japanese pagoda;
- one mugho pine;
- two blue spruce; and
- two net-leaf hackberries.

Approximately 42 trees exist within the footprint of Alternative C (see Figure 3):

- two Austrian pines;
- ten Goldenrain trees;
- two Scotch pines;
- four Siberian elms;
- three eastern cottonwoods;
- three green ash;
- three Lombardy poplar;
- one ginkgo;
- one swamp-white oak;
- one jack pine;
- one ponderosa pine;
- three quaking aspens;
- one Norway maple;
- one European white birch
- one London planetree;
- four cherry trees; and
- one Japanese pagoda.

Birds that could occupy such trees and their type of use are listed in Table 3.

Species	Feed and/or Hunt	Nest
Brewer's Blackbird	✓	✓
American Crow	✓	
American Kestrel	✓	
American Robin	✓	✓
Black-billed Magpie	✓	✓
Black-capped Chickadee	✓	✓
Brown-headed Cowbird	✓	✓
Common Raven	✓	
Dark-eyed Junco	✓	
European Starling	✓	✓
Hairy, Downy Woodpecker	✓	✓
House Finch	✓	✓
House Sparrow	✓	✓
Hummingbird (various)	✓	✓
Mourning Dove	✓	
Northern Flicker	✓	✓
Occasional California Gull	✓	
Red-tailed Hawk	✓	
Rock Pigeon	✓	
Swallows	✓	✓
Western Kingbird	✓	
White-crowned Sparrow	✓	

Table 3: List of Birds and Potential Use of Trees

3.3.4 Surface Soils

The surface soils in the vicinity of the three alternatives discussed in this document are flat and covered with pavement or manicured lawn areas. There is no evidence of erosion in the vicinity

of the three alternatives. There is no known shallow soil contamination in the vicinity of the three alternatives (e-mail communication, Ms. Shannon Smith).

3.4 Description of Relevant Pre-Existing Environmental Factors

The Wasatch Front Regional Council (WFRC 2003) assessed earthquake hazards for Davis County, Utah, including the portion of Hill AFB that includes all three alternatives discussed in this document. The Davis County liquefaction potential map shows this area of Hill AFB to be in the zone labeled as very low risk. The Davis County earthquake hazard map shows this area of Hill AFB to be outside of known fault zones. The Davis County landslide hazard map shows this area of Hill AFB to be outside of known landslide risk zones.

During scoping discussions and subsequent analysis, no other pre-existing environmental factors (e.g., hurricanes, tornados, floods, droughts) were identified for the proposed action.

3.5 Description of Areas Related to Cumulative Effects

One relevant EA was completed during 2006. The title of the previous EA was *Final Environmental Assessment: Proposed Renovation of Building 238, Hill Air Force Base, Utah*. The previous EA analyzed activities that are conducted by 309 MXW in Building 238 that are closely related to the activities being discussed in this document. The environmental analysis for the activities in Building 238 resulted in preparation of a FONSI.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This section begins by presenting, in Section 4.2, the predicted attainment of project objectives for all alternatives.

Section 4.3 discusses effects to the resources that were identified for detailed analysis in Section 1.7.2, and for which existing conditions were presented in Section 3.3. For each of these resources, the following analyses are presented:

- direct, indirect, and cumulative effects of the no action alternative;
- direct, indirect, and cumulative effects of the proposed action; and
- direct, indirect, and cumulative effects of Alternative C.

4.2 Predicted Attainment of Project Objectives of All Alternatives

4.2.1 Predicted Attainment of Project Objective #1

have sufficient space to house all of the necessary equipment and workers

4.2.1.1 Alternative A: No Action

The no action alternative would not provide sufficient space to house the equipment or the workers necessary to respond to upcoming workloads for 309 CMXG.

4.2.1.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

The proposed action would provide sufficient space to house the equipment and the workers necessary to respond to upcoming workloads for 309 CMXG.

4.2.1.3 Alternative C: New Facility South of Building 150

Alternative C would provide sufficient space to house the equipment and the workers necessary to respond to upcoming workloads for 309 CMXG.

4.2.2 Predicted Attainment of Project Objective #2

be located in close proximity to Building 238 to allow efficient completion of workload

4.2.2.1 Alternative A: No Action

The no action alternative would force all work to continue within Building 238, but it would not allow for efficient completion of workload.

4.2.2.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

The proposed action would be located in close proximity to Building 238 and would allow efficient completion of workload.

4.2.2.3 Alternative C: New Facility South of Building 150

Alternative C would be located in close proximity to Building 238 and would allow efficient completion of workload.

4.2.3 Predicted Attainment of Project Objective #3 *incorporate all currently-required technologies*

4.2.3.1 Alternative A: No Action

The required thermal spray coating capability does not exist in Building 238. The no action alternative would not incorporate all currently-required technologies.

4.2.3.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

The proposed action would incorporate all currently-required technologies.

4.2.3.3 Alternative C: New Facility South of Building 150

Alternative C would incorporate all currently-required technologies.

4.2.4 Predicted Attainment of Project Objective #4 *provide security measures for the various weapon system programs*

4.2.4.1 Alternative A: No Action

The no action alternative would provide security measures for the various weapon system programs.

4.2.4.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

The proposed action would provide security measures for the various weapon system programs.

4.2.4.3 Alternative C: New Facility South of Building 150

Alternative C would provide security measures for the various weapon system programs.

4.2.5 Predicted Attainment of Project Objective #5 *be protective of facilities, human health, and the environment*

4.2.5.1 Alternative A: No Action

The no action alternative would be protective of facilities, human health, and the environment.

4.2.5.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

The proposed action would be protective of facilities, human health, and the environment.

4.2.5.3 Alternative C: New Facility South of Building 150

Alternative C would be protective of facilities, human health, and the environment.

4.3 Predicted Effects to Relevant Affected Resources of All Alternatives

4.3.1 Predicted Effects to Air Quality

4.3.1.1 Alternative A: No Action

With respect to air quality, the no action alternative would have no direct effects, no indirect effects, and no cumulative effects.

4.3.1.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

Direct Effects Due to Construction

- **Fugitive Dust:** Emissions of PM-10 and PM-2.5 would be produced as soil is disturbed during proposed construction activities. EPA has estimated that fugitive dust emissions from construction activities produce 0.11 tons of PM-10 per acre per month (EPA 1998), and the PM-2.5 component equals approximately 10 percent of the PM-10 value (MRI 2006). The proposed action would involve an estimated two months of scraping, grading, excavation, and backfill activities (personal communication, Richard Nehring) over an area of approximately 3.4 acres. Uncontrolled fugitive dust emissions of 0.75 tons of PM-10 and 0.08 tons of PM-2.5, respectively, were therefore calculated for the proposed action.

Fugitive emissions from construction activities would be mitigated according to UAC Section R307-205, Emission Standards: Fugitive Emissions and Fugitive Dust and the Hill AFB *Fugitive Dust Plan*. Good housekeeping practices would be used to maintain construction opacity at less than 20 percent. Haul roads would be kept wet. Any soil that is deposited on nearby paved roads by construction vehicles would be removed from the roads and either returned to the site or placed in an appropriate disposal facility.

- **Heavy Equipment:** The internal combustion engines of heavy equipment would generate emissions of VOCs, CO, NO_x, PM-10, PM-2.5, hazardous air pollutants (HAPs), and oxides of sulfur (SO_x). Assumptions and estimated emissions for the construction period are listed in Table 4.

Data Assumptions							
Equipment Type	Diesel Emission Factor (lbs/hr)						
	VOC (HC)	CO	NOx	PM10	HAPs	SOx	
Asphalt Paver	0.28	1.24	2.96	0.24	0.05	0.25	
Bobcat Loader	0.14	0.67	1.00	0.10	0.01	0.08	
Cable Plow	0.59	3.75	4.49	0.59	0.08	0.38	
Compressor (boring)	0.25	1.62	1.94	0.25	0.04	0.16	
Concrete Truck	0.80	3.55	8.50	0.69	0.15	0.72	
Crane	2.14	6.96	17.08	2.39	0.33	1.54	
Dump Truck	0.63	2.04	6.98	0.58	0.16	0.65	
Flat Bed Truck	0.48	1.54	5.29	0.44	0.12	0.49	
Fork Lift	0.42	2.47	1.98	0.40	0.05	0.23	
Generator	0.02	0.10	0.12	0.02	0.00	0.01	
Loader/Backhoe	0.87	4.12	6.12	0.64	0.06	0.52	
Motored Grader	0.83	2.01	5.08	0.53	0.06	0.46	
Scraper	0.33	2.31	4.03	0.58	0.13	0.42	
Track Hoe	0.91	6.65	13.75	1.84	0.26	1.19	
Vibratory Compactor	0.38	1.44	4.31	0.36	0.09	0.46	
Water Truck	1.10	3.58	12.28	1.02	0.28	1.14	
Wheeled Dozer	0.46	1.48	5.08	0.35	0.08	0.49	
Note: VOCs = Hydrocarbons and HAPs = Aldehydes							
Source: Industry Horsepower Ratings and EPA 460/3-91-02							
Construct Power Systems Facility							
EQUIPMENT TYPE	HOURS OF OPERATION	Diesel Emissions (lbs)					
		VOC	CO	NOx	PM10	HAPs	SOx
Asphalt Paver	120	33.6	148.8	355.2	28.8	6	30
Bobcat Loader		0	0	0	0	0	0
Cable Plow		0	0	0	0	0	0
Compressor (boring)		0	0	0	0	0	0
Concrete Truck	240	192.0	852.0	2040.0	165.6	36.0	172.8
Crane	160	342.4	1113.6	2732.8	382.4	52.8	246.4
Dump Truck	160	100.8	326.4	1116.8	92.8	25.6	104.0
Flat Bed Truck		0.0	0.0	0.0	0.0	0.0	0.0
Fork Lift		0.0	0.0	0.0	0.0	0.0	0.0
Generator		0.0	0.0	0.0	0.0	0.0	0.0
Loader/Backhoe		0.0	0.0	0.0	0.0	0.0	0.0
Motored Grader	40	33.2	80.4	203.2	21.2	2.4	18.4
Scraper		0.0	0.0	0.0	0.0	0.0	0.0
Track Hoe	320	291.2	2128.0	4400.0	588.8	83.2	380.8
Vibratory Compactor	160	60.8	230.4	689.6	57.6	14.4	73.6
Water Truck	80	88.0	286.4	982.4	81.6	22.4	91.2
Wheeled Dozer	40	18.4	59.2	203.2	14.0	3.2	19.6
TOTAL ESTIMATED EMISSIONS (lbs)		1160.4	5225.2	12723.2	1432.8	246.0	1136.8
TOTAL ESTIMATED EMISSIONS (tons)		0.58	2.61	6.36	0.72	0.12	0.57

Source of Hours: Discussions With Richard Nehring, Hill AFB Facility Engineer

Table 4: Calculated Heavy Equipment Emissions

- Asbestos:** If Building 244 is demolished, a detailed asbestos survey would be performed by Hill AFB employees prior to writing the specifications for the demolition contracts. Each asbestos abatement contractor would be verified by Hill AFB project managers as qualified to perform regulated asbestos abatement projects, and both the company and individual workers would possess all required certifications to perform the assigned tasks. Prior to beginning any asbestos abatement efforts, a notification of at least 10 days would be provided to DAQ. Because all work would be performed in accordance with standards set by EPA and DAQ, there would be no impacts to air quality associated asbestos abatement.

Direct Effects Due to Operations

Based on interviews with Hill AFB facility engineers, several sources of air emissions from operating the proposed action were identified.

- **Machine Shop Processes:** The various milling, turning, and grinding operations would not be expected to produce regulated air emissions. Electric bake ovens would be used, which would not be expected to produce regulated air emissions. Final smoothing and blending of metal parts would create fugitive dust particles, which would be controlled using high-efficiency particulate air (HEPA) filters or other cartridge style air filtering technology. A notice of intent (NOI) would be submitted to DAQ related to the air filters.
- **Thermal Spray Coating of Metal Parts:** With this process, surfaces of metal parts would be restored using high velocity oxygen fuel (HVOF) or similar thermal spray technology. Air emissions would consist of particulates, which would be controlled using HEPA filters or other cartridge style air filtering technology, and HAPs, which could be controlled (if required by DAQ) using scrubbers or other best-available control technology. Based on an existing similar process in Building 511 on Hill AFB, the thermal spray equipment would be expected to emit approximately 1.5 pounds per year of HAPs, and less than 0.01 pounds per year of PM-10/PM-2.5 combined. To accommodate this process, an existing Hill AFB approval order would be modified, and a modification to the Hill AFB Title V operating permit would be required.
- **Blast Booths:** Abrasive blast booths would be installed to clean surfaces of aircraft parts. The blast booths would be internally vented with HEPA filters or other cartridge style air filtering technology to trap the dust being created within each booth. For this process, no air quality permit updates are anticipated.
- **Electroless Nickel Plating:** This benchtop plating process would operate at room temperature. It would be externally vented, but would not be expected to produce any regulated air emissions. For this process, no air quality permit updates are anticipated.
- **NDI:** A fluorescent magnetic particle inspection technique would be used to determine integrity of metal parts. The dip tanks contain cold liquids; no regulated air emissions would be expected. As part of the process, electric bake ovens would be used, which would not be expected to produce regulated air emissions. For this process, no air quality permit updates are anticipated.
- **Welding:** The electron beam welding equipment would not be expected to produce regulated air emissions. The tungsten inert gas (TIG) welding equipment would not be expected to produce regulated air emissions, but particulate filters would be provided if the TIG welder is vented into the workspace. For this process, no air quality permit updates are anticipated.
- **Degreasing:** A vapor degreaser (Baron Blakeslee or similar unit) would be used for final cleaning of metal parts before they are installed on aircraft. The vapor degreaser would

be a sealed unit, producing no regulated air emissions. If solvent from the vapor degreaser is recycled (distilled) in Building 514 on Hill AFB, the VOCs emitted from the distillation unit (currently reported at 52 pounds per year) would be increased somewhat. A seven-day flexibility notification would be submitted to DAQ related to the vapor degreaser.

- **Boiler:** A boiler capable of supplying 40 British Thermal Units per hour (BTU/hr) would be installed. For the 31,500 ft² structure, a 1.26 million BTU/hr boiler would be required. Based on air emissions from similar boilers in Building 260 on Hill AFB, the resulting air emissions were calculated as 5 pounds per year VOCs and 2 pounds per year HAPs. No air quality permit updates are anticipated.

Prior to operating the proposed action, Hill AFB air quality managers would submit the notices of intent, seven day notifications, and modification requests (all described above) to DAQ. Hill AFB would not be allowed to operate the facilities until DAQ concurs that federal and state requirements are being met. Following this existing Hill AFB process would ensure conformity with the CAA by virtue of complying with EPA regulations and Utah's SIP.

Indirect Effects

During scoping and the detailed analysis, no indirect effects related to air quality were identified for proposed action.

Cumulative Effects

In 2006, DAQ published emission estimates for criteria air pollutants in Davis and Weber Counties (DAQ 2006). The estimates, shown below in Table 5, were based on data from calendar year 2002.

County	VOC	CO	NO _x	PM-10	SO _x
Davis	18,878.71	78,777.83	11,086.59	3,378.55	2,441.04
Weber	16,184.75	62,246.82	6,933.27	2,768.36	296.89

Table 5: 2002 Criteria Pollutant Inventory (tons/year)

- **Construction:** Construction-related air emissions would be limited to duration of six months or less. Comparing the magnitude of predicted construction-related air emissions (Table 4) to existing emissions in Davis and Weber Counties (Table 5), there would not be any significant cumulative effects to air quality associated with constructing the proposed action.
- **Operations:** Hill AFB air quality managers would ensure that long-term operation of the proposed action complies with the Hill AFB Title V Permit; any relevant approval orders; EPA regulations; and the Utah SIP. Any required air quality control devices would be installed and tested prior to allowing newly installed equipment to begin operating.

Comparing the magnitude of predicted operational air emissions to existing emissions in Davis and Weber Counties (Table 5), no cumulative effects to air quality were identified for operating the proposed action.

4.3.1.3 Alternative C: New Facility South of Building 150

Air quality effects due to selecting Alternative C would be similar to those presented for Alternative B (the proposed action). No demolition of structures would occur.

4.3.2 Predicted Effects to Solid and Hazardous Waste

4.3.2.1 Alternative A: No Action

With respect to solid and hazardous waste, the no action alternative would have no direct effects, no indirect effects, and no cumulative effects.

4.3.2.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

Direct Effects Due to Construction

- **Waste Generation:** During the proposed construction activities, solid wastes expected to be generated would be construction debris consisting mainly of concrete, metal, and building materials. These items would be treated as uncontaminated trash. It is possible that equipment failure or a spill of fuel, lubricants, or construction related chemicals could generate solid or hazardous wastes. In the event of a spill of regulated materials, Hill AFB environmental managers and their contractors would comply with all federal, state, and local spill reporting and cleanup requirements.
- **Demolition Debris:** If Building 244 is demolished, any friable asbestos detected during the detailed asbestos survey and subsequently removed during an abatement action, would be disposed in accordance with permit requirements at a disposal facility that is approved to accept friable asbestos. Loose flakes of lead-based paint (confirmed to contain lead by on-site inspections using a portable X-ray fluorescence analyzer) would be scraped, collected, and properly disposed at a permitted hazardous waste disposal facility. Dielectric fluid from any transformers or light ballasts suspected of containing PCBs would be tested, and the equipment would be properly disposed as either a regulated waste (PCB content of 50 parts per million [ppm] or more) or as uncontaminated trash (PCB content less than 50 ppm).

The uncontaminated demolition debris, non-friable asbestos, and lead-based paint that is still affixed to surfaces, would all be disposed off base, at a local construction debris (Class VI) landfill. Class VI landfills are allowed to accept construction and demolition waste, including: non-friable asbestos; lead-based paint that is still affixed to surfaces; and a quantity of 10 PCB-containing light ballasts per structure.

Thermostats that contain mercury switches would be collected by electricians from the Hill AFB facilities maintenance flight (75 CES/CEZ) prior to demolition activities. Any thermostats not saved for local reuse would be delivered to DRMO, which has an office

on Hill AFB. DRMO would send the thermostats to be recycled, and a waste stream would not be created.

Any asphalt pavements surrounding the structures would be removed, collected, and would either be recycled, or stored and made available for reuse during future Hill AFB construction projects.

- **Waste Management:** Hill AFB personnel have specified procedures for handling construction-related solid and hazardous wastes in their engineering construction specifications. The procedures are stated in Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection. All solid non-hazardous waste is collected and disposed on a routine basis. Samples from suspect wastes are analyzed for hazardous vs. non-hazardous determination. The suspect waste is safely stored while analytical results are pending. Hazardous wastes are stored at sites operated in accordance with the requirements of 40 CFR 265. The regulations require the generator to characterize hazardous wastes with analyses or process knowledge. Hazardous wastes are eventually labeled, transported, treated, and disposed in accordance with federal and state regulations.
- **Excavated Soils:** If excavated soils from Hill AFB property exhibit suspicious odors or appearance, the following standard procedures would apply. Samples from suspect wastes on Hill AFB are analyzed for hazardous vs. non-hazardous determination. The suspect wastes are stored at sites operated in accordance with the requirements of 40 CFR 265 while analytical results are pending. Hazardous wastes are eventually labeled, transported, treated, and disposed in accordance with federal and state regulations.

The potential for contaminated surface soils to create a hazardous waste stream is discussed in Section 4.3.4.2.

Direct Effects Due to Operations

Based on interviews with Hill AFB facility engineers, several issues related to solid and hazardous waste were identified for operating the proposed action.

- **Containment:** The proposed action would provide proper secondary containment and security controls for chemical storage areas; waste accumulation points; and any areas where hazardous liquids would be present.
- **Non-Regulated Waste:** Operating the proposed action would generate the following non-hazardous solid waste streams: used grinding wheels consisting of aluminum oxide and silicon carbide; spent elastic abrasive media; rags and wipes from the NDI process; and unused scraps of TIG welding wire. Dust from the thermal spray process, collected in drums and filters, would not be expected to be determined hazardous. If, after being characterized by process knowledge or analytical results, the dust is found to be hazardous, it would be treated as a regulated solid waste.

Unless recycled, these non-regulated items would be disposed as uncontaminated trash. Recycling opportunities are likely to exist for aluminum, sheet metal, and blast media.

Spent NDI penetrant (currently Met-L-Chek FP95A), emulsifier (currently Met-L-Chek E58D), and developer (currently Magnaflux ZP14) would not be expected to be determined hazardous. If, after being characterized by process knowledge or analytical results, the liquids are found to be hazardous, they would be treated as regulated liquid waste.

- ***Regulated Solid Waste:*** Operating the proposed action would generate the following regulated solid waste streams: metal particles; grind mud; spent blast media; HEPA and other cartridge style air filters; vapor degreaser filters; gloves; rags; paper wipes; filter paper; sorbent pads; grit; and sludge. Most dirty rags on Hill AFB can be laundered and used again; the remaining rags are collected and disposed as hazardous waste. The spent blast media can often be recycled. All remaining non-recyclable items would be collected and disposed as hazardous waste.
- ***Regulated Liquid Waste:*** Operating the proposed action would generate the following regulated liquid waste streams that would either be (a) collected in containers, labeled, and transported off base to be treated, and/or disposed in accordance with federal and state regulations, or (b) drain directly to and be treated by the Hill AFB industrial wastewater treatment plant (IWTP): dilute nickel plating solution contained in process rinse water and from a nearby utility sink; and dilute NDI solution containing low concentrations of penetrant, emulsifier, and developer.

Operating the proposed action would generate the following regulated liquid waste streams that would be collected in containers, labeled, and transported off base to be treated, and/or disposed in accordance with federal and state regulations: water soluble oil and gearbox oil; metal fines; sludge; spent nickel plating solution; and any spent vapor degreaser solvents (current products include Lenium, EnSol, PD 680) that are not recycled.

Operating the proposed action would generate used motor oil for which recycling opportunities are likely to exist. Any oil not meeting recycling criteria would be collected in containers, labeled, and transported off base to be treated, and/or disposed in accordance with federal and state regulations.

Indirect Effects

During scoping and the detailed analysis, no indirect effects related to solid and hazardous waste were identified for proposed action.

Cumulative Effects

Proper handling of solid and hazardous waste eliminates releases of contaminants to the environment. There are no cumulative solid or hazardous waste effects associated with the proposed action.

4.3.2.3 Alternative C: New Facility South of Building 150

Solid and hazardous waste effects due to selecting Alternative C would be similar to those presented for Alternative B (the proposed action). No demolition of structures would occur.

4.3.3 Predicted Effects to Biological Resources

4.3.3.1 Alternative A: No Action

With respect to biological resources, the no action alternative would have no direct effects, no indirect effects, and no cumulative effects.

4.3.3.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

Direct Effects Due to Construction

- **TES:** As stated in Section 1.7.2, no plant or animal species listed as TES by state or federal agencies are known or likely to occur in the vicinity of the proposed action. There are no wetlands or floodplains in the vicinity of the proposed action.
- **Construction:** During construction of the proposed action, the 16 trees described in Section 3.3.3 would be removed, and any birds using these trees would be displaced. The loss of habitat would not be significant, as the site consists of habitat that is already heavily impacted by human activities.
- **Mitigation:** If construction occurs during nesting season (usually April through August), an avian survey will be conducted, and an appropriate certificate of registration will be obtained to permit the taking of any protected species. To mitigate the removal of the trees, new trees would be planted at a location approved by the Hill AFB natural resources manager in accordance with the Hill AFB tree removal and replacement plan (Hill 2006b).

Direct Effects Due to Operations

Operating the proposed action would not create any interaction with biological resources, and therefore, no effects to biological resources were identified.

Indirect Effects

During scoping and the detailed analysis, no indirect effects related to biological resources were identified for proposed action.

Cumulative Effects

- **Construction:** Hill AFB natural resources managers intend to mitigate the loss of 16 trees by planting new trees on the base. No cumulative effects to biological resources were identified for the proposed action.

- **Operations:** Since no effects to biological resources were identified for operating the proposed action, no cumulative effects would exist.

4.3.3.3 Alternative C: New Facility South of Building 150

Biological resource effects due to selecting Alternative C would be similar to those presented for Alternative B (the proposed action), except it involves the removal of approximately 42 trees, and mitigation for the 42 trees.

4.3.4 Predicted Effects to Surface Soils

4.3.4.1 Alternative A: No Action

With respect to surface soils, the no action alternative would have no direct effects, no indirect effects, and no cumulative effects.

4.3.4.2 Alternative B (Proposed Action): New Facility in the Vicinity of Building 245

Direct Effects Due to Construction

- **Erosion:** Construction projects can increase soil erosion. The area of proposed construction is nearly flat and the potential for erosion is therefore small. Hill AFB construction specifications would mitigate any erosion potential that does exist by requiring the contractor to restore the land to its original condition. All areas disturbed by excavation would be backfilled, and then either be covered by pavements or re-planted, re-seeded, or sodded to prevent soil erosion. Preventing soil erosion during construction activities is also required to comply with stormwater pollution prevention rules. Since the proposed action would disturb more than one acre, a stormwater pollution prevention plan would be prepared and implemented prior to initiating any site-disturbing activities.
- **Contamination:** If suspected or actual shallow soil contamination (due to suspicious odors or appearance) is encountered in an excavation completed for the proposed action, it would be addressed by the Hill AFB Environmental Management Division in coordination with the project proponent. Funding for the effort would be determined by current Hill AFB policies. Any action would adhere to the Hill AFB soil disposal policy as described in the waste management procedures for excavated soils as discussed in Section 4.3.2.2.

Direct Effects Due to Operations

Operating the proposed action would not create any interaction with surface soils, and therefore, no effects to surface soils were identified.

Indirect Effects

During scoping and the detailed analysis, no indirect effects related to surface soils were identified for proposed action.

Cumulative Effects

Soil erosion would be prevented during and after construction activities. Proper handling of any contaminated soil would prevent releases of contaminants to the environment. There are no cumulative solid or hazardous waste effects associated with the proposed action.

4.3.4.3 Alternative C: New Facility South of Building 150

Surface soils effects due to selecting Alternative C would be identical to those presented for Alternative B (the proposed action).

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